

Louisville Sustainability Advisory Board

Agenda

June 11, 2019
City Hall, 749 Main Street, Spruce Room
6:30 - 8:00pm

1. 6:30PM Call to Order
2. Roll Call
3. Approval of Agenda
4. Approval of Minutes
5. 6:35PM City Staff Updates (10 minutes)
6. 6:45PM City Council Liaison Updates (10 minutes)
7. 6:55PM Public Comments on Items Not on the Agenda (5 minutes, more as needed)
8. 7:00PM LSAB Member Updates and Reports 5 minutes, more as needed)
9. Discussion Item: CC4CA Update
10. Discussion Item: Energy Future Collaboration
11. Discussion Item: Energy and Emissions Reduction Goal Setting Progress and Process
12. Board Chair Elections for 2019-2020
13. Administration Tasks
 - A. Log Volunteer Hours

B. Work Plan Review for Next Meeting

14. Adjourn

Louisville Sustainability Advisory Board

Meeting Minutes: Wednesday, May 15, 2019

City Hall, 749 Main Street, Spruce Room

Chair: Allison Johanson

Secretary: Mark Persichetti

1. Call to Order: The meeting was called to order at 6:36pm by Allison Johanson. Minutes taken by Mark Persichetti.

2. Roll Call: (Members present in bold): **Seth Adams, Allison Johanson, Laura Levesque-Catalano**, Marianne Martin, **Mark Persichetti, Melanie Dubin**; City-Council Liaison **Jay Keany**; City Sustainability Coordinator **Katie Baum**; Resident **Debbie Fahey**.

3. Approval of Agenda: The Meeting Agenda was approved as-is.

4. Approval of Minutes: The Meeting Minutes for April 17th were approved as-is.

5. City-Staff Updates, Katie Baum: Katie passed out copies of a staff-update memo (copy attached) that covered the following:

A. Green-Business: soft launch June 1st, to run until Dec 15th. Next workshop is scheduled for June 18th, at the Water Treatment Plant, 8:30-10am.

For this year, we'll introduce Platinum-level awards, for small, medium, and large businesses. This will be for Gold-level businesses, to provide them an incentive to continue with further 'green' accomplishments. Admin tasks for the program are ongoing.

B. Staff will meet with *Xcel Energy* later this month, to cover data collecting, benchmarking energy usage, and goal setting.

C. For Earth Day, city-staff handed out 1,000 reusable shopping bags, with City-specific graphics. Katie handed out bags to LSAB members.

D. *Republic Services* reps have met with City staff; they'll plan to have info booths at summer City events: Farmers Market, Street-Faire, etc. They'll hold 'neighborhood' meetings in August. Their residential service will 'start' Sept 10th, with a one-week overlap with Western Disposal's service. *Republic's* containers will have color-coded lids: green for compost, blue for recyclables, black for trash. Jay K reported that *Republic* will have 4 new trucks for their Louisville service, with the same 4 drivers in Louisville for each day's neighborhoods' collections.

E. A new E.V. charging station at the Rec Center will be installed, funded by a 'Charge Ahead' grant. Currently, a \$1.50/hr charging fee is being considered; that may change to per-kW pricing.

F. Katie's *Sustainability Series* will continue in August and September at the Library. A 'green-living' fair will be held at the Library in September.

City of Louisville

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303.335.4608 (phone)

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6. City-Council Liaison Update, Jay Keany: Jay reported the City is working with *Xcel Energy* for potential further upgrades to City streetlights to LEDs, for the cobra-head fixtures.

7. Public Comments on Items Not on the Agenda: Resident Debbie Fahey reported she's been trying to get information about why there are no new solar panels installed at the Rec Center. It was her understanding there would be some kind of public/private partnership to fund/implement such an installation.

She also stated the lights at the Rec Center seem to be on for too long after closing, and that some night-time exterior lighting is too bright and annoying to residents like herself! Jay K replied such items may require an I-T correction, to work out with our Parks & Rec Director. He also reported that proposed self-adjusting windows for blocking too much outside light, that would have cost \$200,000-plus were dropped in favor of alternate sunshades that cost \$15,000.

Allison J asked if we should present LSAB opinions on further potential energy-efficient options. Members mentioned options like solar panels incorporated into covers over parking spaces. Laura L-C asked if more 'subscription' energy purchases will be available from *Xcel*; Katie B replied some are planned, and covered some criteria for overall unit sizes on City and Commercial structures.

8. LSAB Member Updates and Reports: Melanie D brought up the topic of herbicides used on City-owned properties (glyphosate and 2, 4-D). An info sheet from city staff was handed out to LSAB members (copy attached). She asked if LSAB can contribute to a policy for their usage. Jay K replied that Council will hold discussion on that topic this coming autumn, with other City boards to also be asked to provide input. Should LSAB collect data to pass along before that later discussion? Does Boulder's sustainability program cover this topic?

9. Single Use Plastics Roundtable Update: Melanie D attended *Recycle-Colorado's* recent roundtable-discussion in Erie, in which community stakeholders discussed challenges and opportunities for the reduction of single-use bags and other packaging. Laura L-C also attended that session. Based on a majority vote of roundtable attendees, *Recycle-Colorado* will engage in a year-long project to create an Action Group to build a Smartphone App for consumer plastics awareness. One avenue may be to piggyback off *King Soopers'* existing app that already contains product nutritional-content information. Creating that Action Group will require at least 8 volunteers.

Laura and Melanie also reported runner-up ideas from the session included:

- consumer incentives to bring in reusable shopping bags
- social-media ad campaign
- adapting local government procurement policies

The follow-up session to start planning for the app is planned for June 19th.

Allison reported she sent a letter to the Mayor from LSAB, recommending inclusion of a ballot question on single-use plastic bags on our next election ballot.

10. Colorado's Bike-to-Work Day: Katie B reported on plans for our local event, and passed out posters for it. She's seeking volunteers to help with our local activities, for June 26th, 6:30 to 9am.

11. Louisville's Walkability and Bike-ability: Katie B reported we don't currently have strong standards for 'protected' bike lanes.

Suggestions were made to put maps of local bike/hiking paths and comment cards in local bike shops, and to provide comment cards on tables on June 26th.

Jay K reported a stoplight is planned for Hwy-42 and Short St, for access to the ballfields on the east side of Hwy-42; then the current entry to their parking lot at Griffith St will be closed.

Katie's timeline for updates to our Sustainability Plan, is to compile and present specific recommendations in April 2020. She'll use a triple-bottom-line analysis for recommendations: economic, environmental, and social factors. Recommendations will be made to Council in June/July 2020.

A 'Sustainable Transportation Summit' sponsored by *Commuting Solutions* was held at CU-Boulder's UMC on May 15th.

12. LSAB's Green-Business Outreach Status: Laura has contacted *Centennial Wine & Spirits*. Allison reported that *EVO* has posted their green-business sticker online. No other LSAB members had new contacts to report. One of the CTC's current business occupants - *Vaisala Corp* - plans to complete its new 30,000 sq-ft headquarters building there by this time next year, with it having carbon-neutral impact.

13. Administration Tasks:

A. Log Volunteer Hours for the month of May 2019

Board Member	Activities	Hours
Seth Adams	Meeting prep, attendance	3.5
Melanie Dubin	Meeting prep, attendance, other meetings	4
Allison Johanson	Meeting prep, attendance, other meetings	9
Laura Levesque-Catalano	Meeting prep, attendance, other meetings	3.5
Marianne Martin	Meeting prep, attendance	0
Mark Persichetti	Meeting prep, attendance, Bo-Co RCAB, Green-Business, P-i-E sessions	9
	Total Hours	29

B. Work Plan Review for Next Meeting: Allison will send a poll to set meeting dates for June & July, to try to ensure we get a quorum for each (June meeting will be on June 11th). Katie will update topics for June & July meetings.

Review of Commercial & Industrial Guidelines(?)

Vote for our 2019-2020 Chairperson.

14. Adjourn: The meeting adjourned at 8:13pm.

2019 LSAB Meetings Schedule, Deadlines, Meeting Assignments

If you are unable to fulfill your assignment, you are responsible for finding a replacement!

Secretary to email agenda, AND previous month's minutes to Kerry Holle: kerryh@louisvilleco.gov	Meeting Date	Chair *	Secretary *
January 6	January 16	Allison	Dan
February 11	February 20	Allison	Marianne
March 11	March 20	Allison	Seth
April 7	April 17	Allison	Laura
May 5	May 15	Allison	Mark
June 3	June 11	Allison	Melanie
July 7	July 17 (TBD)	TBD **	Marianne TBD
August 11	August 21	TBD **	Seth
September 8	September 18	TBD **	Laura
October 6	October 16	TBD **	Mark
November 10	November 20	TBD **	Melanie
December 8	December 18	TBD **	Marianne

*A crossed-out name followed by a second name denotes a substitute.

** 2019-2020 Chairperson TBD after June meeting election.

The Louisville Parks and Open Space divisions use an integrated management approach to controlling noxious and nuisance weeds on City maintained properties, this approach is identified in the City of Louisville Integrated Weed Management Plan (IWMP). The IWMP establishes Best Management Practices and guidelines that aid the City in controlling noxious weeds. The plan was reviewed and approved by the Open Space Advisory Board (OSAB) in 2009 and updated in 2016 with unanimous OSAB approval. The IWMP was also reviewed and supported by the Boulder County Parks & Open Space Weed Coordinator, Colorado State University Weed Science Staff, the Colorado Department of Agriculture State Weed Coordinator, and the City of Lafayette Open Space Superintendent.

The Parks and Public Landscaping Advisory Board (PPLAB) also reviews current practices and procedures for City Parks.

Both PPLAB and OSAB review department policies and practices from time to time to provide recommendations to staff for updates. Both boards will be reviewing department policies and practices in late 2019 or early 2020.

Weed management is conducted by City contractors, staff, and volunteers and includes hand pulling and clipping, mowing, reseeding, grazing, and herbicide applications to combat infestations. Using a combination of methods for noxious weed control increases the effectiveness and efficiency of control while also reducing herbicide use. When herbicides are used on City maintained properties, applicators are required to be licensed by the Colorado Department of Agriculture and are required to contact individuals listed on the [Colorado Pesticide Sensitivity Registry](#). The City only uses herbicides that are legally registered by the EPA and applied in compliance with EPA regulations.

Two Chemicals account for the majority of herbicide used in the City

- Glyphosate is the non-selective herbicide used in the City's Parks. This herbicide is used for "spot" spraying. As the term implies, this herbicide is used in a targeted fashion and is sprayed directly on the intended weed. No weed = no spraying.
- 2, 4-D (2,4-Dichlorophenoxyacetic Acid) is a selective herbicide. This means it is formulated to control select weeds but not damage the grass lawn. The city does one application of 2, 4-D in the spring to help control a wide variety of weed species.

The Parks, Recreation and Open Space uses a number of communication platforms to inform the public about spraying activities. Staff uses onsite signage in advance of applications and uses yellow colored flags during the application to let users know that herbicide has been used. Once the sprayed plant material is dry it is safe to re-enter the area and staff will remove the flags. The city also provides an opportunity for residents and users to sign up for e-notifications related to herbicide application locations and timing. Please click [HERE](#) to sign up for e-notifications.

You can help reduce the use of herbicides in Louisville

- Clip a seed head or, if appropriate, pull a weed
- Volunteer for a weed pulling event or through our adopt a park program
- Use herbicide sparingly on your private property.

For more detailed information on weed management, please consider reviewing the City of Louisville Integrated Weed Management Plan at <http://www.louisvilleco.gov/home/showdocument?id=1526> or the Weed Management and Herbicide Guide at <http://www.louisvilleco.gov/home/showdocument?id=11691>.

If you have additional questions please contact 303-335-4509.

Memorandum

To: Louisville Sustainability Advisory Board

From: Katie Baum, Sustainability Specialist

Date: June 11, 2019

Re: Staff Updates

General

- Green Business workshops update:
 - April 16th – Marketing your Green Business: **15 attendees**
 - May 9th - Electric Vehicle Charging Station Workshop & EV Test Drive: **20-25 attendees**
 - June 18th – Commercial Water Conservation: **10 RSVP'd**
 - September 17th, Sustainable Transportation for your Employees Workshop @ TBD, hosted by Commuting Solutions
 - October 16th, Sustainable Purchasing Practices Workshop @ TBD, hosted by Matt LeBeau and EcoCycle
 - TBD (most likely late March/Early April), Renewable Energy/Solar workshop with installers
- Data collection and benchmarking energy usage with Xcel Energy continues. Goal setting meeting took place with Council liaisons in late-May. Updates on progress and goal setting to follow.
- The City applied for a Charge Ahead grant on February 15th for a Level 2 charger to be installed at the newly renovated Recreation Center. Staff will send RFP out to RAQC vendors on June 18th.
- Staff is working on a Municipal Electric Vehicle Plan, which will provide guidelines for future EV adoption and preparedness action items.
- There will be a final draft of the Transportation Master Plan soon for staff to review and and share with the public in mid-June ahead of the public open house on June 26th.
- Republic Services will be taking part in City events throughout the summer, as well as ongoing communications regarding service. Four neighborhood meetings will take place in August at corresponding neighborhood parks. Republic will be on-hand to answer residents' questions and additional services available through the organization. Staff will also be at a booth



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promoting recycling and compost education and giving away 15 kitchen compost pails at each meeting with "how to" information included.

- Sustainability booth at the City Open House was a success with recycling/composting education. Saturday's Drive-in Movie Night and City of Louisville Open House had a great crowd for the event (somewhere in the neighborhood of 1,000-1,250 by the time the movie was playing) and the community really enjoyed having the opportunity to visit the City Open House Booths and watch the movie under the stars.
- Sustainability Series and Additional Planned Outreach:
 - June 26th: Bike to Work Day
 - August: Republic Services Neighborhood Meetings
 - September 11th: Public Transit in Louisville: How to Ride with Commuting Solutions
 - September 21st: Green Living Fair @ Louisville Library
 - Fall 2019
 - Bike Maintenance 101 or Fix a Flat with Louisville Cyclery
 - Know Before You Go: Electric Vehicles or Renewable Energy 101 with CSU Energy Extension
 - Multimedia – film showing
 - The Biggest Little Farm @ Louisville Library with Louisville Community Garden
- Next steps – none. This is an informational item only.

Memorandum

To: Louisville Sustainability Advisory Board

From: Katie Baum, Sustainability Specialist

Date: June 11, 2019

Re: Discussion Item 9: CC4CA Update

Summary

The session that concluded May 3rd was productive for advancement of state climate and clean energy policy. The CC4CA Steering Committee last year adopted two top priorities for the session, both of which were passed and funded.

[HB19-1261](#)

A longtime goal of climate policy advocates, this bill establishes in statute statewide targets for greenhouse gas emissions reductions and directs the Air Quality Control Commission to adopt rules and regulations to reach those goals. The State of Colorado is now committed to a carbon pollution reduction of at least 26% by 2025, 50% by 2030, and 90% by 2050 (all compared to a 2005 baseline). In adopting these new rules, the AQCC is required to consider impacts on disproportionately affected communities and the reliability of service.

[SB19-096](#)

Directs the AQCC to inventory and forecast statewide GHG emissions to help the state track progress toward the new statewide emissions goals.

Other important bills that passed include:

[HB19-1003](#), expands the capacity of community solar gardens.

[HB19-1159](#), extends the current tax credits for buying and leasing electric vehicles through 2026.

[HB19-1198](#), strengthens the EV infrastructure grants program administered by the Colorado Energy Office.



[HB19-1260](#), requires local governments when updating building codes to include a recent version of the International Energy Conservation Code.

[HB19-1272](#), enables public housing authorities to participate in the state's commercial PACE program.

[HB19-1314](#), establishes programs to assist in the transition of coal-impacted communities.

[SB19-077](#), authorizes utility investments in EV infrastructure.

[SB19-181](#), overhauls regulation of the oil and gas industry, including adoption of regulations to control escape of the powerful heat-trapping gas methane (the portion of the bill that CC4CA focused on).

[SB19-236](#), sunset review of the Public Utilities Commission, expands and strengthens the PUC's oversight authority. In the final days of the session, a number of other bills were incorporated into this bill. CC4CA was neutral on one and supportive of the others, and the net result of this complicated and sizable legislation looks to be positive. Among other provisions, the bill requires the PUC to more fully consider the impacts of carbon pollution; gives the PUC oversight authority on Tri-State resource plans and other decisions; protects funding for rooftop solar; and allows affected communities to participate in PUC decision-making. The complicated array of new PUC directives will require the attention of CC4CA and our partners as PUC rulemaking, utility resource planning, and rate cases unfold.

New Members

CC4CA is now 27 members strong, with the additions of Dillon and Ridgway this month, plus Longmont and Clear Creek County earlier this year.

Next Steps

None. This is an informational item only.

Memorandum

To: Louisville Sustainability Advisory Board

From: Katie Baum, Sustainability Specialist

Date: June 11, 2019

Re: Discussion Item 10: Energy Future Collaboration Update

Background

In 2018, the City of Louisville entered into a partnership with Xcel Energy through the Energy Future Collaboration program. The City and Xcel signed a Memorandum of Understanding that provides a strategy and framework for cooperation and achievement of a shared vision through broad collaboration, focusing on innovation, clean energy, economic development opportunities, customer choice programs and technology.

Unlike the previous Partners in Energy program, Energy Future prioritizes both renewable energy integration and energy efficiency and usage reduction and focuses primarily on commercial/industrial, residential and municipal use.

The City and Xcel developed the [Energy Future Work Plan](#) as a guiding document for action items. The plan focuses on information sharing, alternative energy and carbon reduction goal setting, energy efficiency, transportation electrification and economic development.

Progress

Since the development of the EFC Work Plan, staff, Council liaisons and Xcel have met for two quarterly meetings.

Completed action items include:

- 2018/2019 report card for public outreach
- Green Business Breakfast w/ Xcel outreach
- City to begin implementing Energy Start Portfolio for major municipal facilities
- City to begin conducting municipal facilities' building audits



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- Analyze what 100% renewable looks like for community goal-setting and considering programs available to assist in closing the carbon-free gap.
- City to begin carbon-reduction goal setting for municipal and community-wide and establish measurements of success.
- Check-in on second round of Renewable*Connect participation opportunities. Tentative Phase schedule as follows:
 - Xcel anticipates filing this program for Public Utility Commission approval in Summer 2019
 - Pending approval, the new renewable resource will be acquired throughout 2020
 - Pending approval, customer enrollment for the program can begin as early as fall of 2021
 - Construction to begin on this renewable resource by early 2022 Program begins producing energy in early 2022
- Utility bill insert for residential rebate outreach in June
- Choose and finalize three late spring/summer events for Home Energy Squad showcasing/participation
 - One completed to date

Next Steps

None. This is an informational item only.

Memorandum

To: Louisville Sustainability Advisory Board

From: Katie Baum, Sustainability Specialist

Date: June 11, 2019

Re: Discussion Item 11: Energy and Emissions Reduction Goal Setting

Background

The Louisville Sustainability Action Plan (LSAP) outlines the following goal related to Climate & Energy: *"Reduce energy consumption, increase the use of clean energy and transition away from fossil fuels."* Included within identified strategies, the LSAP recommends setting "new goals for GHG reductions."

In 2018, the City entered into a partnership with Xcel Energy through the Energy Future Collaboration program. The City and Xcel signed a Memorandum of Understanding that provides a strategy and framework for cooperation and achievement of a shared vision through broad collaboration, focusing on innovation, clean energy, economic development opportunities, customer choice programs and technology.

In partnership with Xcel, the City committed to analyzing what 100% renewable energy looks like for community goal-setting, considering programs available to assist in closing the carbon-free gap and setting goals for municipal and community-wide carbon reduction .

Xcel Energy Presentation Summary

In April 2019, Xcel Energy presented information on renewable energy and energy efficiency options (see attached). The information includes data on baseline energy usage for municipal, residential and commercial entities in Louisville and the renewable breakdown for all three sectors as of the end of 2018.

As of today, municipal operations electric use runs off of 48% renewable, residential at 36% and commercial at 30% when including Xcel's current energy mix.

Emissions Reduction and Renewables Goal Setting



Staff put together potential scenarios for both emissions reductions and renewables goal setting for municipal and community-wide. Goals were also compared to surrounding communities (Lafayette, Lakewood and Longmont), as well as Boulder County.

After further discussion with Council Liaisons and City staff, proposed goals were recommended. Staff has started to analyze potential strategies and their feasibility/cost for the goals and will present findings to City Council in July.

Goal Setting Timeline

May: Initial discussion with Council Liaisons

June: LSAB update provided by Staff

July: Council presentation/adoption by City staff, direction from Council on proposed goals and potential strategies and their feasibility/cost.

Proposed Goals

Municipal:

- Meet all of the City of Louisville's municipal electricity needs with 100% carbon-free sources by 2025. (28% gap in 5 years)
- Reduce core municipal greenhouse gas emissions annually from the 2016 baseline through 2025.

Community-wide:

- Generate 75% of Louisville's residential and commercial electricity from carbon-free sources by 2030. (17% gap in 10 years)
- Reduce core community-wide greenhouse gas emissions annually from the 2016 baseline through 2030.

Next Steps

None. This is an informational item only.

Renewable Energy Options

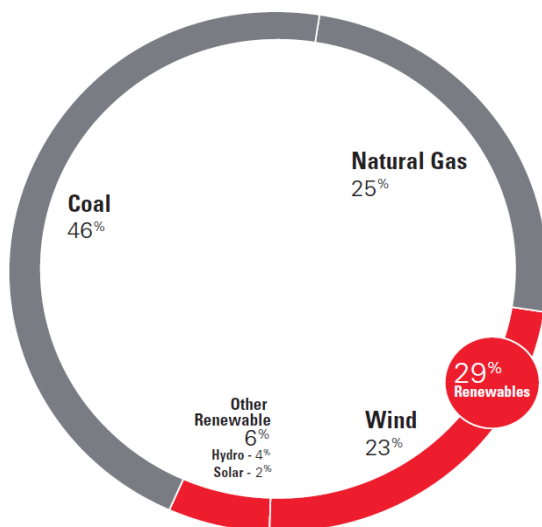
Louisville's guide to renewable energy
choices through Xcel Energy



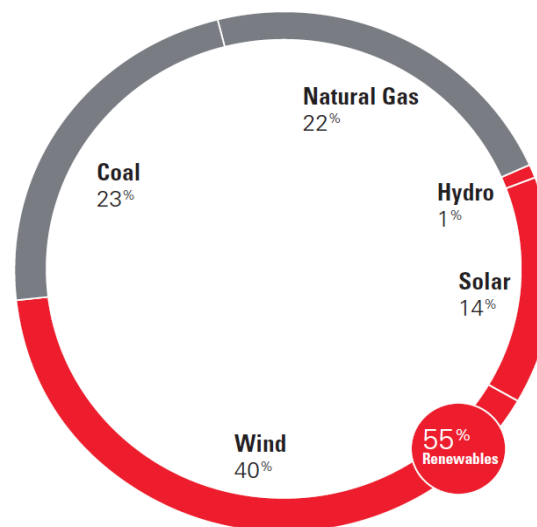
April 2019

Access to a Cleaner Grid is Growing

2016 Colorado Energy Mix



2026 Estimated Energy Mix
Under The Colorado Energy Plan



Renewable energy is a vital and growing part of the energy we supply to your community. Today, your community receives 29 percent carbon-free electricity coming from renewable sources. By 2026, our CO service territories will be **55 percent carbon free** with renewable sources

Did you know?

Solar*Rewards Community: Xcel Energy has 59 active solar gardens (73 MW) with over 1,800 subscribers.

Solar*Rewards: Over 36,000 installed systems totaling 333 MW.

Clean Energy to Suit Your Community



Subscription



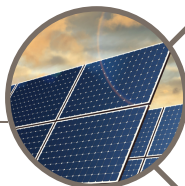
Renewable*Connect[®]

Enjoy solar energy with locked-in pricing and flexible subscription terms, available to Colorado residents in 2018; plans to file a second launch Q3 2019



Windsource[®]

Choose clean, hassle-free wind energy without the need to install equipment



Solar*Rewards Community[®]

Subscribe to a portion of a large solar facility operated by a third party and receive credit on your Xcel Energy bill



Solar*Rewards[®]

Earn an annual incentive check for solar you install while reducing the amount of energy on your bill



Net Metering

Install your own wind and solar and receive credit on your Xcel Energy bill for excess renewable production



On-Site

Louisville's Sustainability Projects & Goal Setting

- Increase city energy efficiency via leveraging Xcel Energy's existing programs
- Develop alternative energy and carbon reduction goals
- Focus on economic development and participation in Xcel Energy's related programs
- Electrification of the transportation sector
- Fuel switching
- Reliability and resilience

→ Analyze gap to get to 100% renewable energy for municipal facilities and community-wide by 2025

Louisville Municipal - Renewable Participation

Total City Load	7,328,349	(2,018)		
CITY FACILITY INFO	kWh	MWh	RECs	% of Load
Windsource	0	-	Yes	0.00%
Solar*Rewards	367,556	368	No	5.02%
Net Metering Only	0	-	Yes	0.00%
Solar*Rewards Community	1,647,830	1,648	No	22.49%
Renewable Connect	1,413,404	1,413	Yes	19.29%
Non-renewable Load	3,899,559			53.2%
Total Renewables (RECs count)	1,413,404			
Total Renewables (RECs don't count)	3,428,790			
% Renewable (RECs count)	19.29%			
% Renewable (RECs don't count)	46.79%			

Program	Count (Premises)
WS	0
S*R	3
S*RC	7
R*C	16

Solar*Rewards and Solar*Rewards Community do not count towards RECs

Louisville Municipal - Renewable Participation

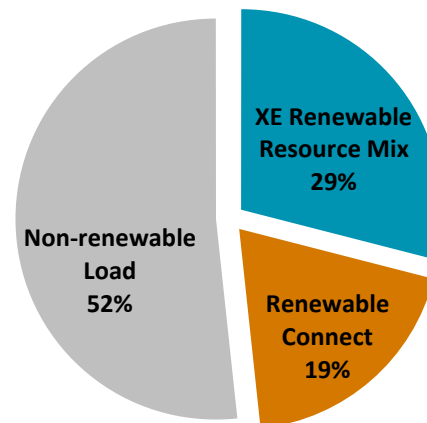
Goal examples:

To achieve a 2025 goal of 50% renewables, the city has only about a 2% gap to fill.

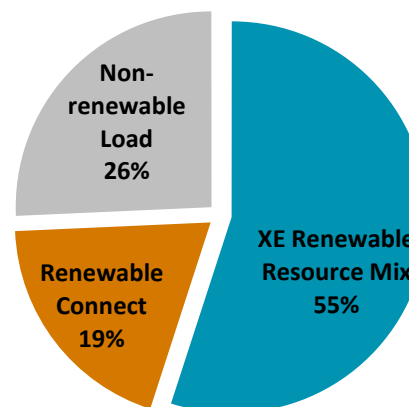
*(Based on 2018 consumption and estimated 2019 renewable energy participation once Renewable*Connect generation is fully utilized.)*

Only 26% Gap to achieve 100% renewables by the year 2025.

City Facilities Today



City Facilities 2025



Carbon Emissions Summary

Customer Segment	Electricity Consumption (kWh)	Windsorsource (kWh)	Net Metering (kWh)	Renewable Connect (kWh)	Electricity Consumption minus Renewables (kWh)	Gas Consumption (therms)	Carbon Emissions Electric (mt CO ₂ /MWh)	Carbon Emissions Gas (mt CO ₂ /Th)
Municipal	7,328,349	-	-	1,413,404	5,914,945	192,730	3,265	1,021
Residential	60,751,777	2,853,900	1,044,697	180,491	56,672,689	5,660,483	31,283	30,001
Business	134,488,551	1,048,913	-	-	133,439,638	4,192,578	73,659	22,221
Total	202,568,677	3,902,813	1,044,697	1,593,895	196,027,272	10,045,791	108,207	53,243

Customers reporting emissions under The Climate Registry, World Resources Institute, or ISO protocols should use the following 2018 emissions intensities for Scope 2 market-based reporting.

Electric	0.552	metric tons CO ₂ /MWh
Gas	0.0053	metric tons CO ₂ /Th

Louisville C&I – Renewable Participation

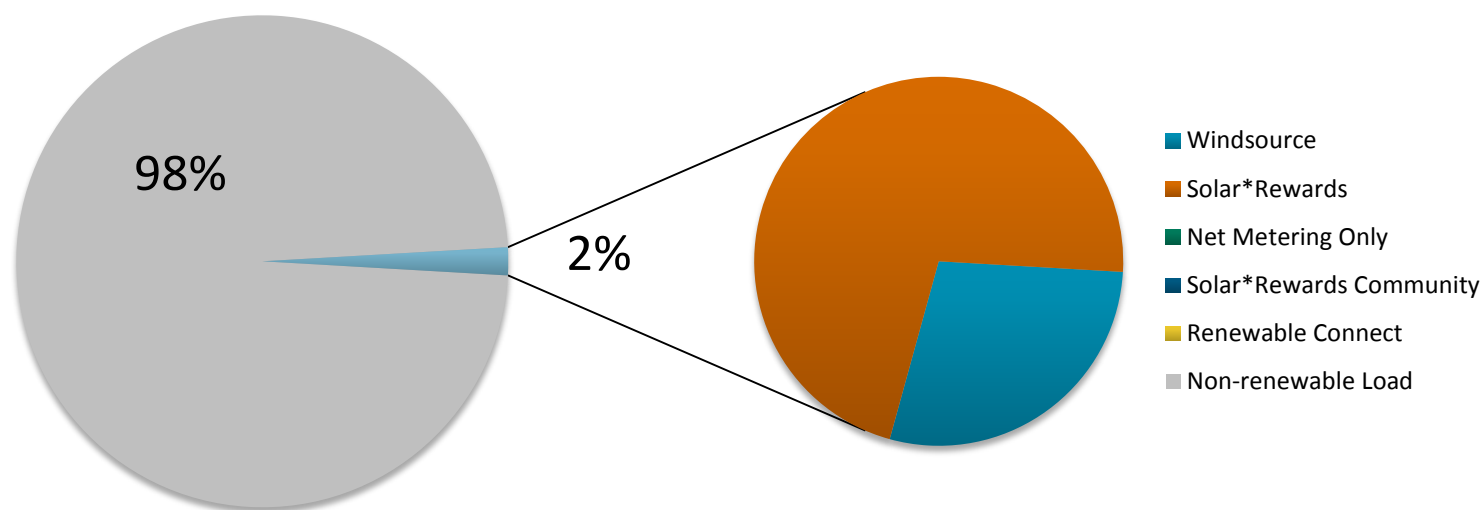
Total C&I Load	134,488,551	(2,018)		
C&I ANALYSIS	kWh	MWh	RECs	% of Load
Windsor	1,048,913	1,049	Yes	0.78%
Solar*Rewards	1,766,240	1,766	No	1.31%
Net Metering Only	0	-	Yes	0.00%
Solar*Rewards Community	0	-	No	0.00%
Renewable Connect	0	-	Yes	0.00%
Non-renewable Load	131,673,398			97.9%
Total Renewables (RECs count)	1,048,913			
Total Renewables (RECs don't count)	2,815,153			
% Renewable (RECs count)	0.78%			
% Renewable (RECs don't count)	2.09%			

Program	Count (Premises)
WS	16
S*R	27
S*RC	0
R*C	0

Solar*Rewards and Solar*Rewards Community do not count towards RECs

Louisville C&I – Renewable Participation

Business Analysis



Louisville Residential – Renewable Participation

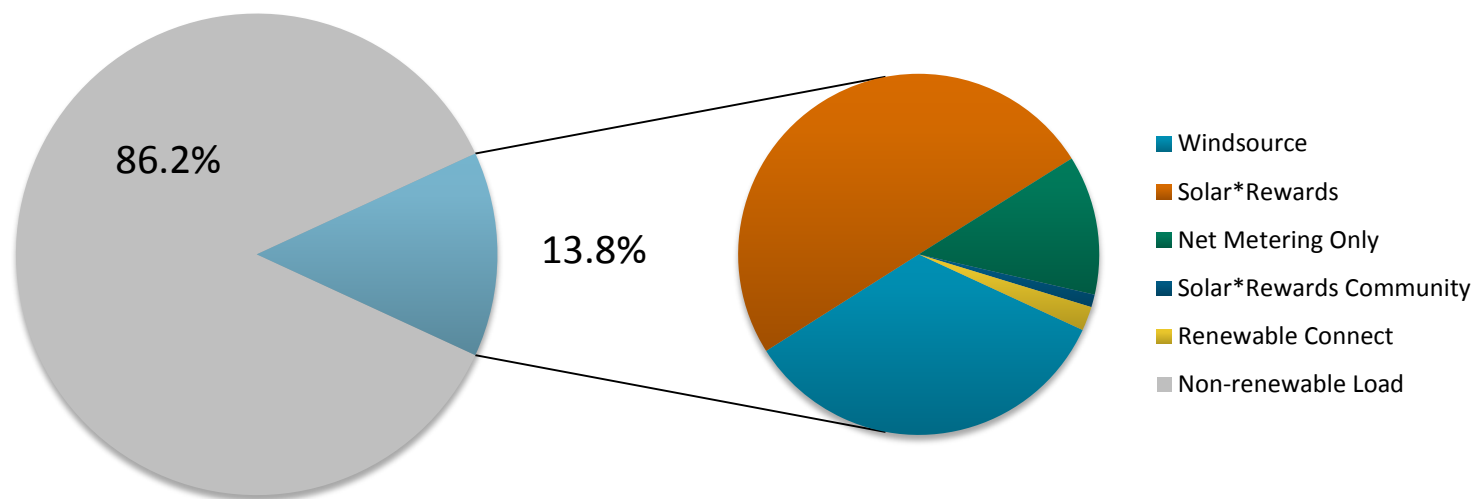
Total Residential Load	60,751,777	(2,018)		
RESIDENTIAL ANALYSIS	kWh	MWh	RECs	% of Load
Windsor	2,853,900	2,854	Yes	4.70%
Solar*Rewards	4,186,187	4,186	No	6.89%
Net Metering Only	1,044,697	1,045	Yes	1.72%
Solar*Rewards Community	94,585	95	No	0.16%
Renewable Connect	180,491	180	Yes	0.30%
Non-renewable Load	52,391,917	52,392	-	86.24%
Total Renewables (RECs count)	4,079,088			
Total Renewables (RECs don't count)	8,359,860			
% Renewable (RECs count)	6.71%			
% Renewable (RECs don't count)	13.76%			

Program	Count (Premises)
WS	673
S*R	597
NEM	154
S*RC	16
R*C	28

Solar*Rewards and Solar*Rewards Community do not count towards RECs

Louisville Residential – Renewable Participation

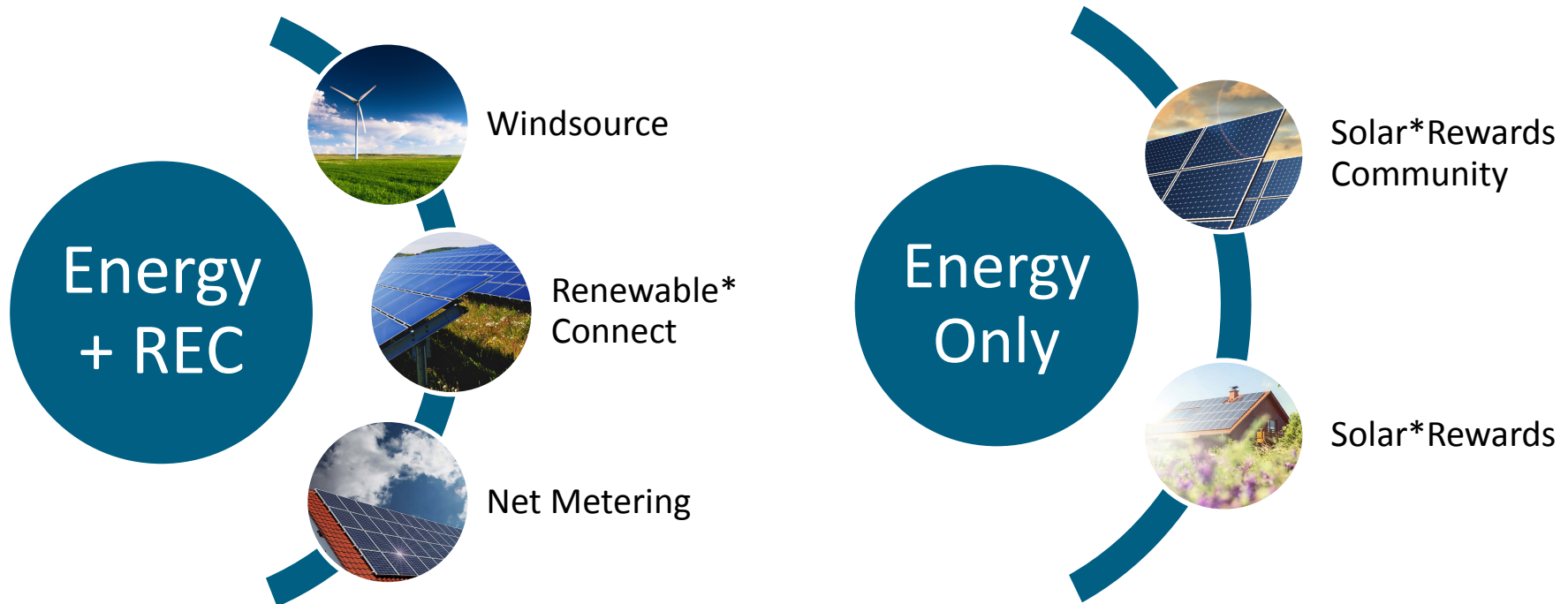
Residential Analysis



When RECs are Yours to Claim

You can use Renewable Energy Credits (RECs) to reach your sustainability goals, achieve green certification and promote your community's commitment to clean energy.

Here is a summary of our programs and those that are sold as a bundle (to include RECs). Participating in a program that includes RECs allows you to claim you use renewable energy.



Municipal & Community-wide Goals

Gap to Target - 50% Today	Current	Current + XE RE	Gap (%)	Gap (MWh)
XE Renewable Energy Resource Mix	29%			
Municipal Facilities	19%	48%	2%	0
C&I	0.78%	30%	20%	27,194
Residential	6.71%	36%	14%	8,679
Baseline Renewables – Total		32%	18%	37,410

Gap to Target - 100% by 2025	Current	Current + XE RE	Gap (%)	Gap (MWh)
XE Renewable Energy Resource Mix	55%			
Municipal Facilities	19%	74%	26%	1,884
C&I	0.78%	56%	44%	59,471
Residential	6.71%	62%	38%	23,259
Baseline Renewables – Total		58%	42%	86,026

Municipal Renewable Options to 100% by 2025



	Renewable* Connect	Windsource	Solar*Rewards Community	Solar*Rewards Medium	Solar*Rewards Large	Net Metering
Scale	1,884 MWh / 0.7 MW	1,884 MWh	1,884 MWh 1.3 MW	1.5 MW ~200,000 SF Rooftop	1.1 MW	1.5 MW
Cost	Year 1: \$7,537 (10 year contract today's pricing)	\$28,265/yr	Savings /Neutral	Savings /Neutral	Savings /Neutral	Premium
RECs to Claim	Yes	Yes	No	No	No	Yes
REC payment	No	No	Yes	Yes	Yes	No
Location / Tangibility	Colorado	Colorado	Local/ Neighboring Community	Local Facility	Local Facility	Local Facility
Availability ¹	Very Limited	Unlimited	Somewhat limited	Limited	Limited	Unlimited
Timing	2018	Anytime	Annual RFP 2017- 19	Quarterly Application 2017- 19	Annual RFP 2017- 19	Anytime
Contract Term	month to month/5yr/ 10yr	month to month	> 10 yrs	20 yrs	20 yrs	20 yrs
Effort required	Low	Low	Medium	Large	Large	Large

Municipal Renewable Energy Recommendations

Fulfill 100% Renewable Energy by 2025 = 26% Gap; 1,884 MWh

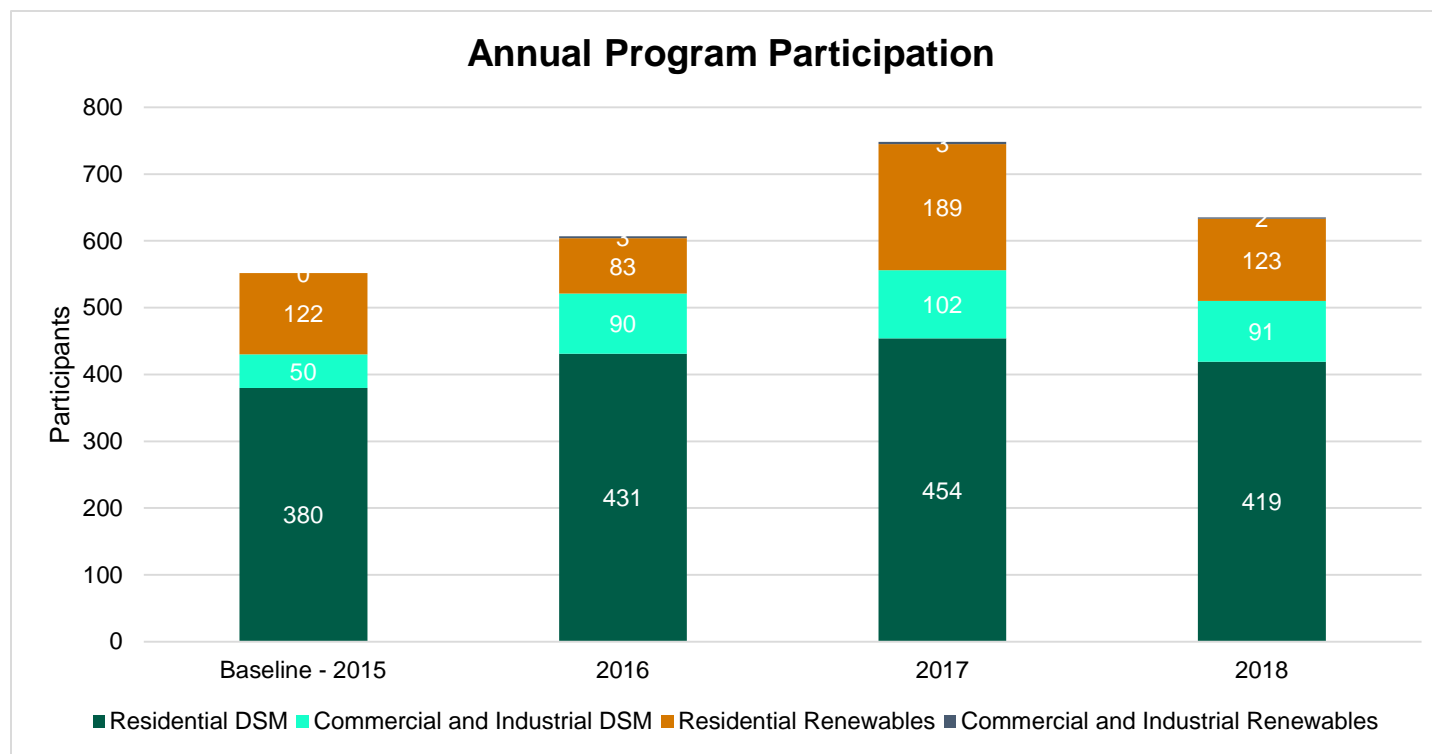
Fulfill 100% Renewable Energy by 2030 = 11% Gap; 785 MWh

(assuming XE @ 70% renewables)

Recommendations:

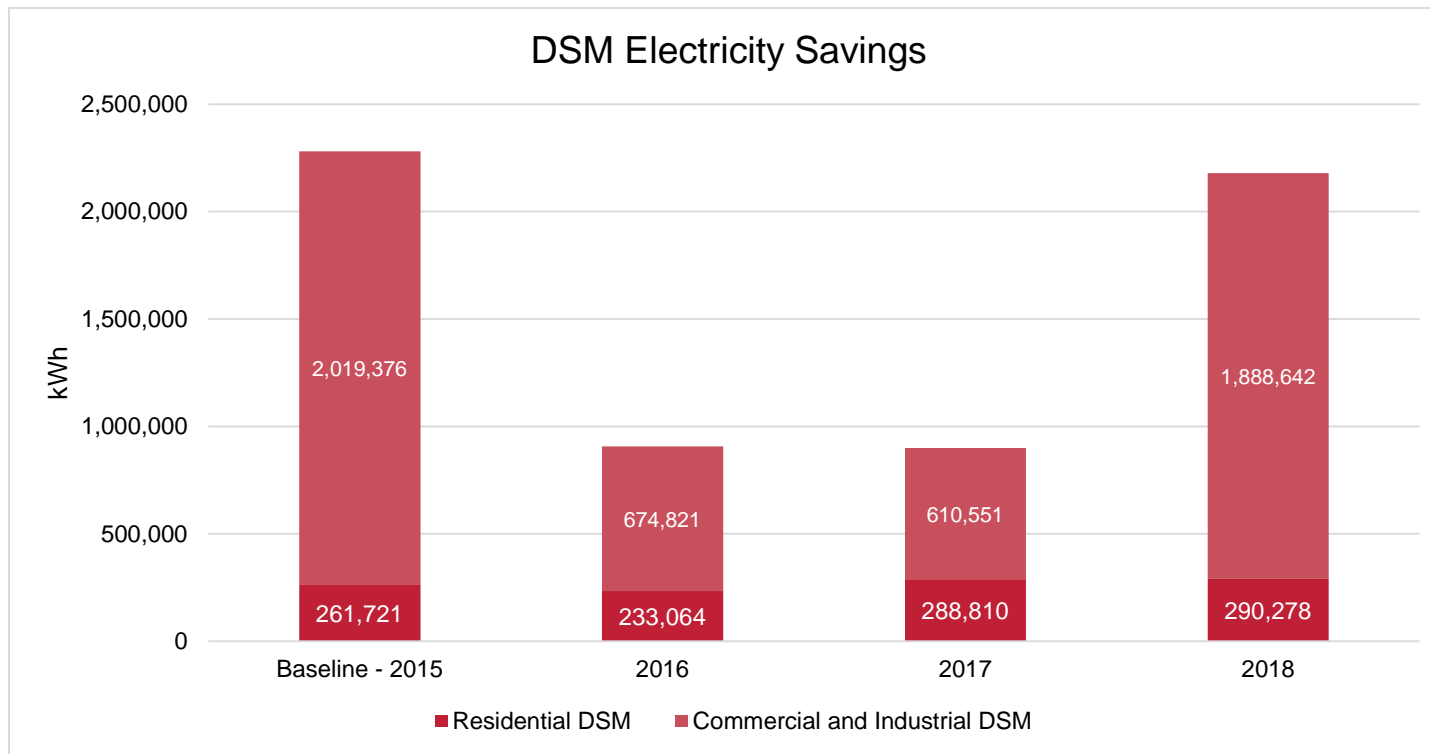
1. Net metering on rooftop space
2. Renewable*Connect for remaining portion
3. On-site Solar*Rewards for visibility and/or Solar*Rewards Community participation
4. And/or purchase unbundled RECs

Louisville Energy Efficiency participation 2015-2018



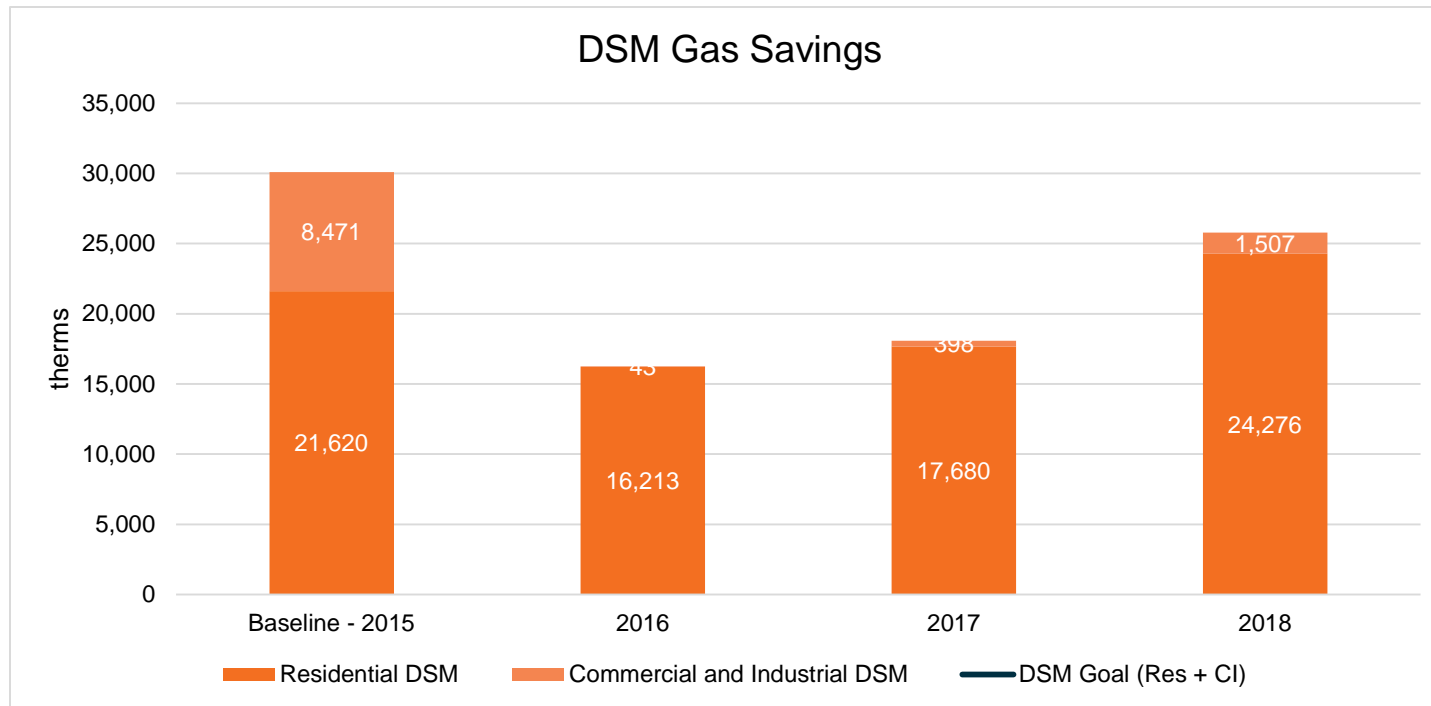
Source: Partners In Energy Implementation Metrics Q42018

Louisville Energy Efficiency electricity savings 2015-2018



Source: Partners In Energy Implementation Metrics Q42018

Louisville Energy Efficiency natural gas savings 2015-2018



Source: Partners In Energy Implementation Metrics Q42018

On-Site Energy Audit

- **FREE** through end of June
 - Less than 50,000 square feet
 - Normally \$125 - \$500
- Includes audit of:
 - Lighting systems
 - Heating & cooling systems
 - Motors & drives
- Recommendations for energy conservation opportunities
 - Costs, savings, payback
 - Available Xcel Energy rebates
- Businesses with peak demand less than 100 kW may qualify to receive free energy-saving products at time of audit!



Lighting Efficiency

Eligible Projects

- Upgrading existing lighting system
- New construction
- Installing advanced lighting controls

Benefits

- Upgrade to high-efficiency, long-lasting LEDs
- Reduce energy use
- Lower replacement & maintenance costs
- Improve light quality
- Quick ROI



Small Business Lighting

Program Details

- Qualified customers receive:
 - Free lighting assessment
 - Recommendation report
 - Implementation support
- Peak demand less than 400 kW



Benefits

- Upgrade to high-efficiency, long-lasting LEDs
- Reduce energy use
- Lower replacement & maintenance costs
- Improve light quality
- Quick ROI

Lighting Case Study

- Green Mountain Ace Hardware
 - 32,000 sq. ft.
 - Inefficient fluorescent T-8 lighting
- Local contractor helped assess existing lights, made recommendations
- Chose low-maintenance LED option
- Doubled light output
- 50% reduction in energy

Project Highlights	
Project	Replace old lighting with high-efficiency LED lighting
Project Cost	\$81,000
Xcel Energy Rebates	\$22,400
Estimated Annual Energy Savings	155,568 kWh
Payback Term	5.1 years

Heating & Cooling

- Save money on energy bills by upgrading or improving efficiency of heating and cooling systems
- Rebates can cover up to 60% of up-front costs



Heating Efficiency

- Available to natural gas customers
- Rebates available for:
 - Hot water boiler
 - Furnace
 - Water heater
 - ECM furnace fans

Cooling Efficiency

- Lower up-front costs
- Gain year-over-year savings
- Rebates available for:
 - Chillers
 - Direct evaporative pre-coolers
 - ECMs

Don't forget the VFDs on...

- Centrifugal fans (*ventilation*)
- Chiller pumps (*cooling*)
- Boiler pumps (*heating*)

Refrigeration

Program Details

- Free on-site refrigeration assessments
- Receive complimentary energy-saving products
- Report on findings and cost-savings recommendations
- Custom projects also considered

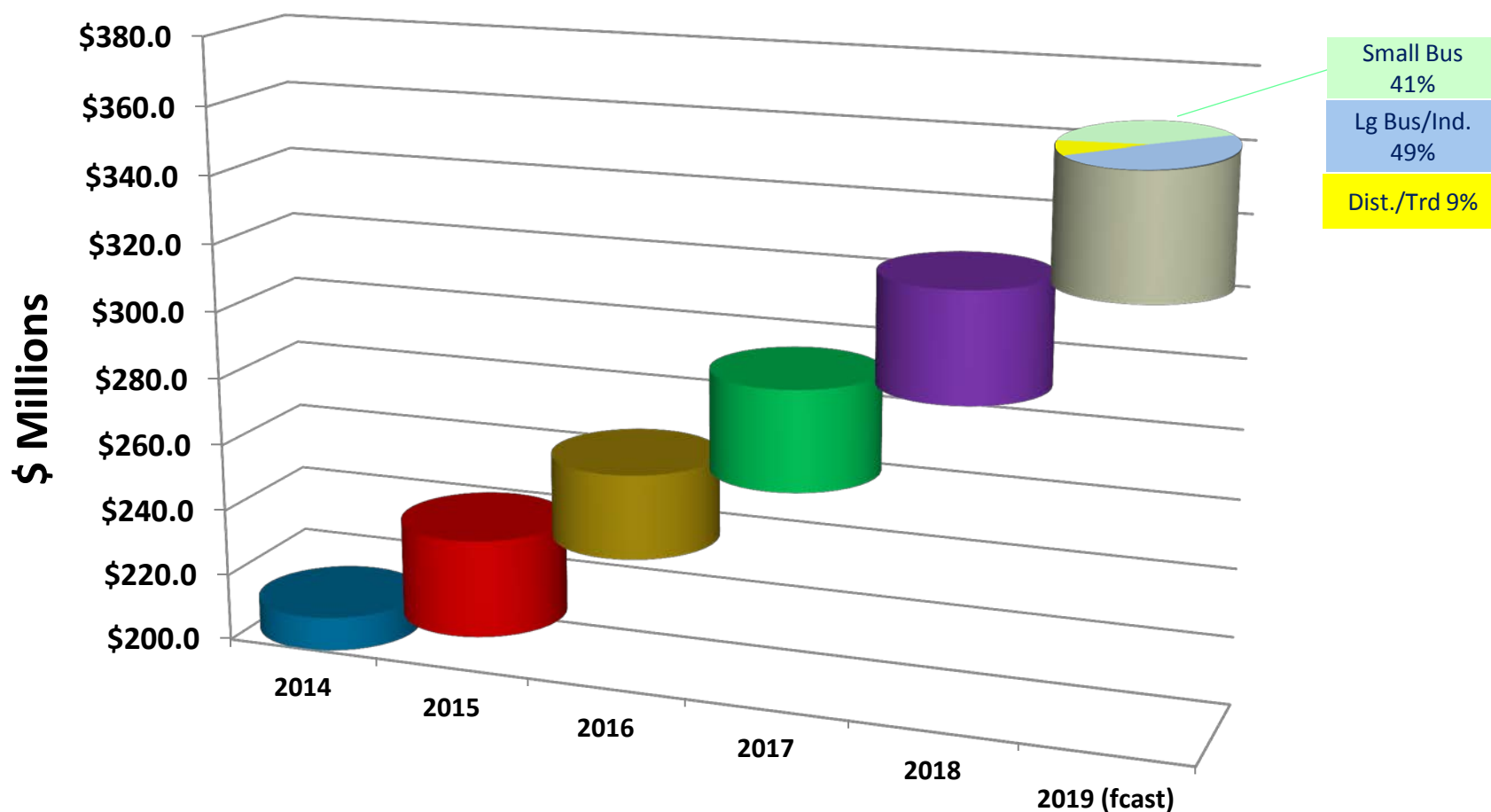


Benefits

- Reduce energy use and costs on large energy users
- Reduce equipment failures and maintenance costs
- Offset up-front costs of refrigeration upgrades with rebates on qualifying equipment

Your Share?

In 2019, Colorado businesses will receive ~ \$37 Million from Xcel Energy programs



Business Energy Efficiency Programs

- **Commercial Refrigeration Efficiency**
- Compressed Air Efficiency
- Computer Efficiency
- **Cooling Efficiency**
- Custom Efficiency
- Energy Management Systems
- Heating Efficiency
- LED Street Lights
- Data Center Efficiency
- **Lighting Efficiency**
- **Small Business Lighting**
- Motor and Drive Efficiency
- Multifamily Buildings
- New Construction
- Process Efficiency
- Recommissioning
- Self-Directed
- Energy Benchmarking
- Business Energy Analysis

Residential Energy Efficiency Programs

- **Home Lighting and recycling**
- School Education Kits
- Energy Feedback
- Energy Efficient Showerhead
- **Refrigerator and Freezer Recycling**
- ENERGY STAR New Homes
- **Evaporative Cooling**
- Residential Heating
- **Home Energy Squad**
- High Efficiency Air Conditioning
- Insulation and Air sealing
- Home Performance with ENERGY STAR
- Water Heating
- Home Energy Audit
- **Low Income - focused**

Appendix

Renewable Programs at a Glance

	Renewable*Connect	Windsource	Solar*Rewards Community	Solar*Rewards	Net Metering
Energy Resource	50 MW of additional competitively bid Colorado solar	Colorado wind	Competitively bid up to 2 MW per project	On-site personal solar	On-site solar or wind
Sustainability Claims	Claim renewable energy benefits	Claim renewable energy benefits	No claims to renewable energy benefits	No claims to renewable energy benefits	Claim renewable energy benefits
Impact to all Customers	No cost to non-participants	No cost to non-participants	Low cost to non-participants	Highest cost to non-participants for incentive + net metering benefits	Moderate cost to non-participants for net metering benefits
Cost Savings	Potential for cost savings	Cost savings not likely	Potential for cost savings*	Potential for cost savings*	Potential for cost savings*
Program Charge	Monthly charge on utility bill approved by PUC; locked-in during contract	Monthly charge on utility bill approved by PUC; subject to change	Negotiated with developer; not regulated by PUC	Negotiated with installer; not regulated by PUC	Negotiated with installer; not regulated by PUC
Financial Credit	Fuel cost credit on Xcel Energy bill	NA	Average Retail Rate + REC incentive	Net metering plus production incentive	Net metering
Contract Terms	Xcel Energy contract with flexible terms and modest termination fee	Xcel Energy contract with monthly term and no termination fee	Third-party contract with long term and termination clause;	System contract with installer; interconnect and incentive agreements with Xcel Energy	System contract with installer; interconnect agreement with Xcel Energy

*Potential for cost savings depends on the contract terms with third-parties; Xcel Energy is unable to predict or advise on the likelihood of cost savings associated with third-party contracts.

Solar*Rewards and Solar*Rewards Community Capacity Acquisitions 2017-19



Solar*Rewards Annual Capacity	2017	2018	2019	Total
Small Option A	24	24	24	123
Small Option B	9	18	24	
Medium	24	24	24	72
Large	6	10	14	30
Total Program Capacity	63	76	86	225

Solar*Rewards Community Annual Capacity	2017	2018	2019	Total
Minimum	15	15	15	45
Maximum	30	35	40	105
100% Low-income	4	4	4	12
Combined Maximum	34	39	44	117

*Program capacity is measured in megawatts (MW). Applications may be accepted on a monthly, quarterly or annual basis depending on program size

Renewable*Connect

Subscribe to local solar energy

Features

Flexible terms- Choose from monthly, five-year or 10-year subscriptions.

Choice- Decide how much renewable energy you want to subscribe to.

Locked-in pricing- Enjoy more certainty with set price schedules for the contract term.

Green energy- RECs are retired on your behalf, allowing you to make claims on the use of renewable energy.

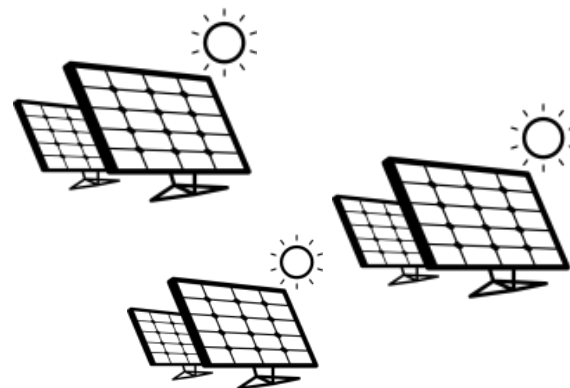
Did you know?

Renewable*Connect is supplied with energy from 50 MW of Colorado solar.

Get Started

Renewable*Connect is our newest program coming to Colorado residents in 2018 that can deliver clean, local and reliable energy to your community.

Enrollment begins early 2018. Please visit xcelenergy.com/RenewableConnect to check availability and learn more.



Windsource

Add more Colorado wind to your energy mix

Features

Low cost- No upfront fee, just a minimal monthly charge on your electric bill.

Choice- Choose how much wind power you want to purchase, from one 100 kWh block up to 100 percent of your usage.

Green energy- RECs are retired on your behalf, allowing you to make claims on the use of renewable energy.

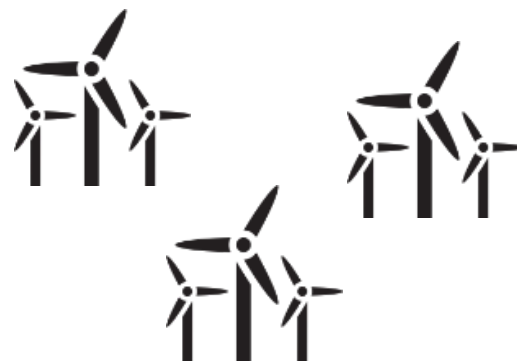
Did you know?

Over 48,000 Colorado homes and 750 local businesses already participate!

Get Started

Windsource is an easy, inexpensive way to support green energy, and you can subscribe today. Just complete an online application or speak to our energy experts for help enrolling.

Visit xcelenergy.com/Windsource to learn more.



Solar*Rewards Community

Support a solar garden and get paid for solar energy production

Features

Third-party provider- Contract terms defined by provider; and no installation is required.

Consistency- You still receive electric service and billing from Xcel Energy.

Bill credit- Receive a bill credit for your portion of the garden's solar energy production.

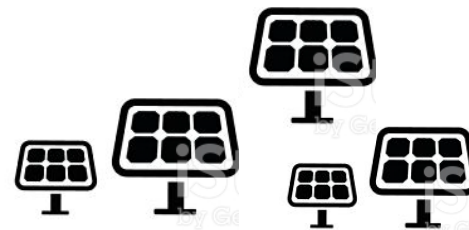
Did you know?

We have 25 active solar gardens (18.5 MW) with over 1,060 subscribers.

Get Started

Subscribe to a solar garden to access solar energy with nothing on your roof. Contact a provider within your county to request a subscription. The solar garden operator is your advisor to potential savings, as well as subscription terms and conditions.

View the list of solar gardens by visiting xcelenergy.com/Solar.



Solar*Rewards

Install on-site solar and receive incentives

Features

Ownership- Generate clean energy through solar panels installed on your home or business

Use what you need- Fulfill your energy needs with what your system produces.

Energy credit- Receive a production incentive to offset costs.

Net metering- If you generate more energy than you need, you can sell the excess back to us

Did you know?

Solar*Rewards has over 34,000 installed systems totaling 292 MW.

Get Started

Installing on-site solar is a great way to invest in renewable energy. Your system will be integrated with our grid to ensure you receive reliable power even when the sun isn't shining.

Find out about availability and how to apply for incentives by visiting xcelenergy.com/Solar.



Net Metering Only

Install on-site solar and keep the RECs

Features

Ownership- Generate clean energy with solar or wind installed on your home or business.

Use what you need- Fulfill your energy needs with what your system produces.

Bill credit- If you generate more energy than you need, we will pay you for the excess.

Green energy- RECs are retired on your behalf, allowing you to make claims on the use of renewable energy.

Did you know?

The average solar panel produces about 30 kWh of energy each month.

Get Started

Net Metering allows you to generate your own energy and retain the renewable attributes that your system produces.

Learn more about how to apply and interconnect to our grid by visiting xcelenergy.com/Solar.



SUSTAINABILITY ADVISORY BOARD

2019 WORKPLAN*

MONTH	TOPIC AREA / PROJECT UPDATE / PRESENTATION
JANUARY 16, 2019	N/A
FEBRUARY 20, 2019	GREEN BUSINESS PROGRAM – 2018 PRESENTATION (PACE) LSAB PROCESSES + PROCEDURES (CMO) - update CC4CA (CMO) - update
MARCH 20, 2019	GREEN BUSINESS PROGRAM – 2018 OVERVIEW + 2019 KICK OFF <ul style="list-style-type: none"> Outreach and support for 2019 from LSAB Green business breakfast in April – input/support TWO YEAR SUSTAINABILITY ACTION PLAN UPDATE (SUSTAINABILITY SPECIALIST)
APRIL 17, 2019	WASTE <ul style="list-style-type: none"> Waste Hauler RFP and changes - update Waste discussion surrounding Sustainability Action Plan Recycling and composting at Parks and Open Space - update Recycling and composting outreach at Parks and Open Space – input/support SUSTAINABILITY ACTION PLAN UPDATING CHECK IN SUMMER SUSTAINABILITY EVENTS/PROGRAMS/COMMUNICATIONS – input/support
MAY 15, 2019	TRANSPORTATION <ul style="list-style-type: none"> Planning for Bike to Work Day in June SINGLE USE PLASTICS ROUNDTABLE (RECYCLE COLORADO) - update
JUNE 19, 2019	ENERGY <ul style="list-style-type: none"> Energy Future Collaboration (SUSTAINABILITY SPECIALIST) - update Goal setting process and progress - input Multifamily outreach – input/support 2018 Louisville Community Energy Report (XCEL) - update
JULY 17, 2019	TRANSPORTATION MASTER PLAN (PLANNING) – update SUSTAINABILITY ACTION PLAN UPDATING CHECK IN
AUGUST 21, 2019	LOCAL FOOD + AGRICULTURE FALL SUSTAINABILITY EVENTS/PROGRAMS/COMMUNICATIONS – input/support
SEPTEMBER 18, 2019	ENERGY <ul style="list-style-type: none"> EFC 2020 Work Plan Development – Input from 2019 Work Plan TBD
OCTOBER 16, 2019	TBD
NOVEMBER 20, 2019	SUSTAINABILITY ACTION PLAN UPDATING CHECK IN TBD
DECEMBER 18, 2019	2019 WRAP UP + 2020 PLANNING/IMPLEMENTATION

* This is a tentative work plan for 2019. Work plan is subject to change depending on internal or external demand or necessity and is to be evaluated for changes during LSAB monthly meetings.

Monthly Timeline:

1. Agenda will be sent to Board Chair the first Monday of each month for input/finalization.
2. Board Chair will let Staff Liaison know of any input or necessary changes by the first Wednesday of each month.
3. The Board Chair will finalize the Agenda and previous meeting minutes and submit to Kerry Holle, Public Works Sr. Administrative Assistant, each Tuesday prior to the week of LSAB meeting.

DRAFT